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A dense monitoring of 2I/Borisov activity with TRAPPIST telescopes

Emmanuel Jehin[1], Youssef Moulane[1,2,3], Francisco Pozuelos[1], Jean Manfroid[1], and Zouhair Benkhaldoun[3]

[1]Université de Liège (ULiege), STAR Institute, Liège, Belgium (ejehin@uliege.be)

[2]European Southern Observatory (ESO), Santiago, Chile

[3]Oukaimeden Observatory, Cadi Ayyad University, Marrakech, Morocco

We report on the regular observation with broad band and cometary narrow band filters of the first interstellar active comet, 2I/Borisov, with both TRAPPIST-South and -North telescopes (TS and TN) [1]. We followed 2I activity since its discovery on September 11, 2019 (r_h=2.8 au inbound) until the beginning of March 2020 when it was 2.9 au outbound and TS operations had to stop because of Covid-19 and la Silla Observatory closure. The comet activity reached a maximum on November 29, 2019 (r_h=2.01au), 10 days before perihelion with an apparent magnitude of 16.50±0.04 measured within an aperture radius of 5 arcsec in R filter, an A(0)fp(R) dust proxy = 135±7 cm and a Q(CN)=(4.5±0.7) 10^{24} molecules/s (using a Haser model and vp=vd=1km/s [2]). Unlike the first interstellar object, 1I/Oumuamua, discovered in 2017 [3,4], 2I was showing an extended coma surrounding its nucleus and a short tail. We first detected CN in 2I with TN on October 18 when the comet was 2.65 au from the Sun while we never detected C_2. We were able to follow the CN activity of 2I for more than 3 months.

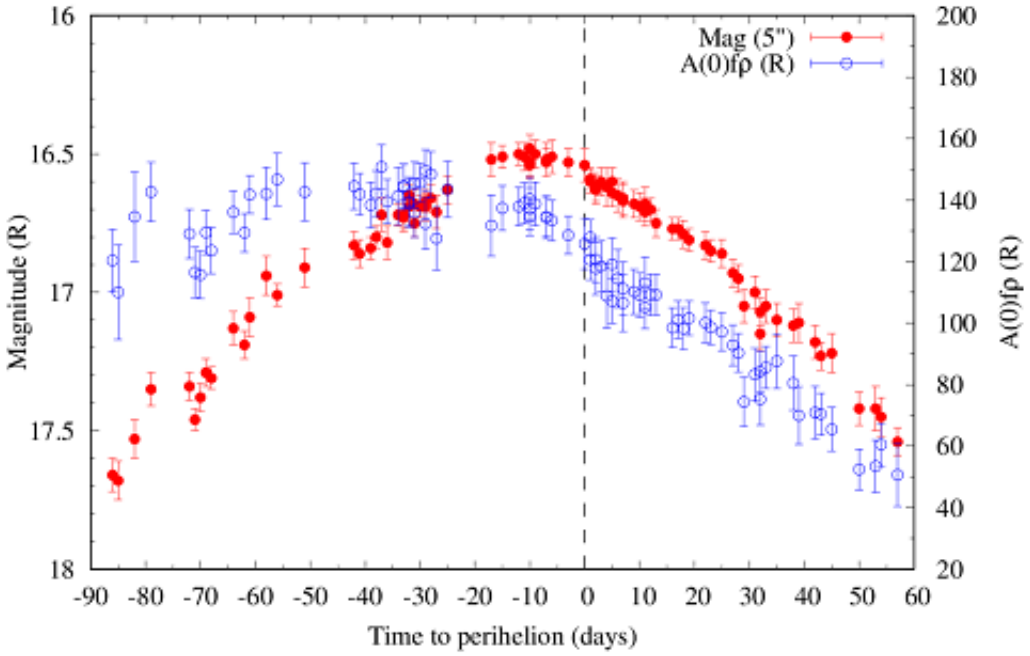

Figure 1: Light curve (R mag) and A(0)fp dust proxy of 2I/Borisov as a function of days to perihelion. The A(0)fp values are computed at 10 000 km from the nucleus and normalized to phase angle of 0°.

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